



# Incremental encoders

<b>Compact optical</b>	<b>Sendix Base KIS40 / KIH40 (shaft / hollow shaft)</b>	<b>Push-Pull / RS422 / open collector</b>
------------------------	---	---

Mounting accessory for shaft encoders		Order No.
<b>Coupling</b>	bellows coupling ø 15 mm [0.59"] for shaft 6 mm [0.24"]	<b>8.0000.1202.0606</b>
Connection technology		Order No.
<b>Connector, self-assembly (straight)</b>	M12 female connector with coupling nut	<b>05.CMB 8181-0</b>
<b>Cordset, pre-assembled</b>	M12 female connector with coupling nut, 2 m [6.56'] PVC cable	<b>05.00.6041.8211.002M</b>

Further accessories can be found in the accessories section or in the accessories area of our website at: [www.kuebler.com/accessories](http://www.kuebler.com/accessories).  
Additional connectors can be found in the connection technology section or in the connection technology area of our website at: [www.kuebler.com/connection\\_technology](http://www.kuebler.com/connection_technology).

## Technical data

Mechanical characteristics		Working temperature range	
<b>Speed</b>	max. 4500 min <sup>-1</sup>	-20°C ... +70° [-4°F ... +158°F]	
<b>Mass moment of inertia</b>	approx. 0.2 x 10 <sup>-6</sup> kgm <sup>2</sup>	<b>Materials</b>	
<b>Starting torque - at 20°C [68°F]</b>	< 0.05 Nm	shaft	stainless steel
<b>Shaft load capacity</b>	radial 40 N axial 20 N	flange	aluminium
<b>Weight</b>	ca. 0.17 kg [6.00 oz]	housing	aluminium
<b>Protection acc. to EN 60529</b>	IP64	cable	PVC
		<b>Shock resistance acc. to EN 60068-2-27</b>	1000 m/s <sup>2</sup> , 6 ms
		<b>Vibration resistance acc. to EN 60068-2-6</b>	100 m/s <sup>2</sup> , 55 ... 2000 Hz

Electrical characteristics			
Output circuit	RS422 (TTL comp.)	Push-Pull <sup>1)</sup> (7272 comp.)	Open collector (7273)
<b>Power supply</b>	5 V DC ±5%	10 ... 30 V DC	10 ... 30 V DC
<b>Power consumption with inverted signal (no load)</b>	typ. 40 mA / max. 90 mA	typ. 50 mA / max. 100 mA	100 mA
<b>Permissible load / channel</b>	max. ±20 mA	max. ±20 mA	20 mA sink at 30 V DC
<b>Pulse frequency</b>	max. 250 kHz	max. 250 kHz	max. 250 kHz
<b>Signal level</b>	HIGH LOW	min. 2.5 V max. 0.5 V	min. +V - 2 V max. 0.5 V
<b>Rising edge time t<sub>r</sub></b>		max. 200 ns	max. 1 µs
<b>Falling edge time t<sub>f</sub></b>		max. 200 ns	max. 1 µs
<b>Short circuit proof outputs <sup>2)</sup></b>		yes <sup>3)</sup>	yes
<b>Reverse polarity protection of the power supply</b>		no	yes
<b>UL approval</b>	pending		
<b>CE compliant acc. to</b>	EMC guideline 2004/108/EC		
<b>RoHS compliant acc. to</b>	guideline 2011/65/EU		

## Terminal assignment

Output circuit	Type of connection	Cable (isolate unused wires individually before initial start-up)									
3, 4, 6 with inv. signal	1, 2	Signal:	0 V	+V	A	$\bar{A}$	B	$\bar{B}$	0	$\bar{0}$	
		Cable colour:	WH	BN	GN	YE	GY	PK	BU	RD	

- +V: Encoder power supply +V DC
- 0 V: Encoder power supply ground GND (0 V)
- A,  $\bar{A}$ : Incremental output channel A
- B,  $\bar{B}$ : Incremental output channel B
- 0,  $\bar{0}$ : Reference signal

1) Max. recommended cable length 30 m [98.43'].  
2) If power supply correctly applied.  
3) Only one channel allowed to be shorted-out:  
at +V= 5 V DC, short-circuit to channel, 0 V, or +V is permitted.  
at +V= 5 ... 30 V DC, short-circuit to channel or 0 V is permitted.

# Incremental encoders

**Compact optical**

**Sendix Base KIS40 / KIH40 (shaft / hollow shaft)**

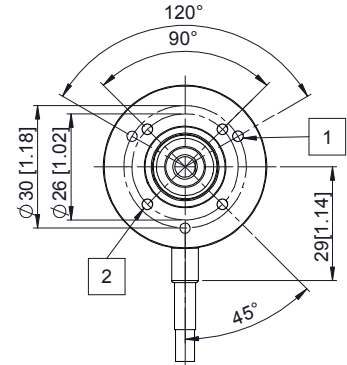
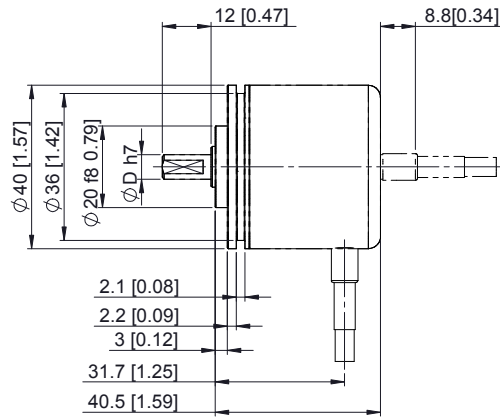
**Push-Pull / RS422 / open collector**

## Dimensions shaft version

Dimensions in mm [inch]

**Clamping / synchro flange,  $\varnothing 40$  [1.57]**  
**Flange type 1**

- 1 3 x M3, 4 [0.16] deep
- 2 4 x M3, 4 [0.16] deep

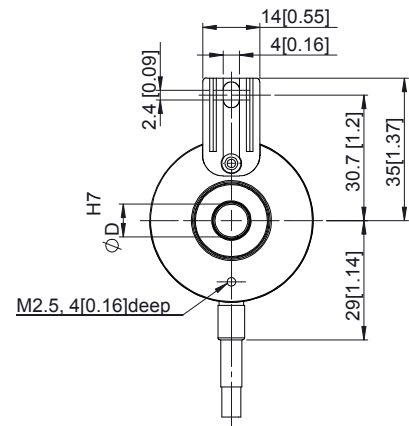
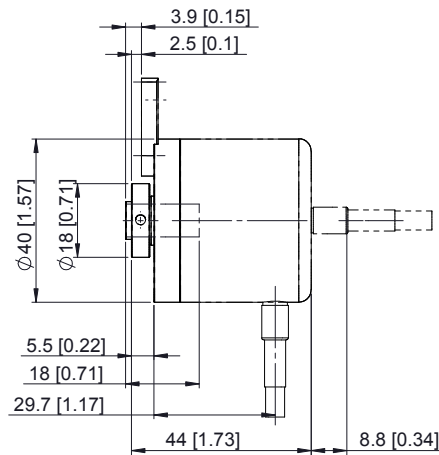


D =  $\varnothing 6$  [0.24]  
 $\varnothing 1/4$ "

## Dimensions hollow shaft version

Dimensions in mm [inch]

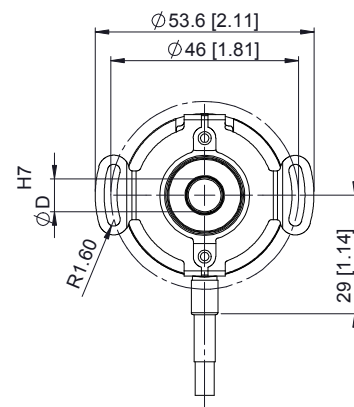
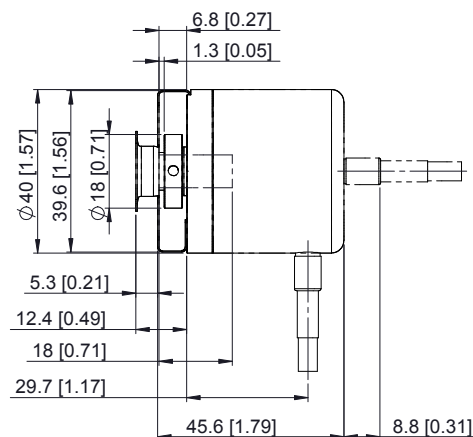
**Flange with spring element long**  
**Flange type 2**



D =  $\varnothing 8$  [0.31]  
 $\varnothing 1/4$ "

**Flange with stator coupling,  $\varnothing 46$  [1.81]**  
**Flange type 5**

Shaft: minimum insertion  
depth 1.5 x D



D =  $\varnothing 8$  [0.31]  
 $\varnothing 1/4$ "